

**Is  
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D.  
Parker  
The Problem?**  
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# COMPUTERWORLD

The Newsweekly for the Computer Community

**Is Fortran  
Fight Coming?**  
See Page 3

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## Data-Base Backed

Washington, Aug. 30

The powerful Joint Economic Committee of the U.S. Congress appears ready to back the concept of a "National Data Center."

Its Economic Statistics Subcommittee has issued a unanimous report calling for "the methodical establishment of a national statistical servicing center (sometimes called a national data center) and for greatly expanded and accelerated efforts to transform the nation's many statistical programs into a system of interrelated, accessible data."

The subcommittee held four days of public hearings on the concept earlier. A major conclusion of the just-issued report: "Further significant improvement in our statistical services depends upon a higher degree of integration and coordination of our statistical programs."

The approach is backed, too, by most elements of the Johnson Administration, including the Budget Bureau.

The subcommittee has called for "major and far-reaching reforms" to affect every function of the statistical system including concepts and definitions, sampling design, collecting and tabulating procedures, and storage, retrieval, and dissemination of information.

The National Data Center would be started with data judged to be most critical to public policy requirements. A national statistical index and library to serve users of government statistics would be an early feature of the center.

The Department of Commerce would get the job of designing and operating the center.

## Late News

An informed information source reports that IBM is expected to announce the Model 10, Model 25, and Model 35 shortly.

The Model 10 will have a rental range of \$1100/\$2500 a month, and will use tapes as well as discs compatible with the IBM 1130. The 10 will be Model 20 compatible.

Also, an expectation for Model 85 has been aroused, although its announcement is much less definite.

IBM is also expected to announce a keyboard tape unit based upon the MTST-magnetic tape selectric typewriter. This will use the same 1/4 inch cassette that is currently used on the typewriter station, and offer for \$1200 a month a conversion station to go to 1/2 inch tape. Rental cost for the computer MTST will be in the vicinity of \$700 a month.

With the announcement of this unit, and one from Honeywell, Control Data would have its first substantive competition.

## Stormy Debate Highlights Washington ACM Meeting

# ACM Leaders Hit Academic Snobbery



Control Data's New Large-Scale 3500 Computer System

## CDC 3500 Re-announced For Mid-68-Paged Operation

MINNEAPOLIS, Sept. 5 - Control Data Corporation today re-introduced their 3500 system - the highest member of the CDC 3100/3300 family. Deliveries will start in mid-1968 for the new large-scale multiprogramming computer system. Facilities include a built-in paged memory organization, memory protection, floating

point and a special self-contained Business Data Processor which provides for the execution of field searches, editing and code conversion instructions on variable length business data processing formats.

The Business Data Processor is quite separate from the central 3500 processor, and in some respects makes the 3500 a multi-processor system. The

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## COBOL Performance Data To be Published

Washington, Sept. 1 - A powerful group of users including representatives of the United States and Canadian governments and the giant aerospace industry this week put its support behind a revitalized COBOL evaluation committee under CODASYL. The committee intends to gather -- and to supply to COBOL users -- information "pertaining to the effectiveness, efficiency, implementation and use" of COBOL -- an aim which goes far beyond the style of information presently supplied by CODASYL committees.

In a release today the committee asked for the assistance of business and institutional representatives. Such people were asked to communicate with any of the committee members (see box).

### Impact on Manufacturers

The committee has in fact been in existence for some time, but today's release marks a major step forward into real activity. The organizations represented on the committee, even without any further assistance already have in their files large amounts of data which,

if published, would undoubtedly influence potential computer purchases. As such, it would form a powerful persuasion to manufacturers to improve the efficiency of their offerings.

### Other Activities

The committee also intends to instigate other efforts to promote COBOL and its use. This comes immediately after IBM's policy statement has restricted that company's use and support of COBOL and Fortran in favor of PL/1.

### Committee Members

R. Blásius, Canadian Treasury  
Ottawa, Ontario  
G.C. Durand, Southern Railway  
System  
Atlanta, Ga.  
H.J. Kringel, Boeing  
Renton, Wash.  
G.E. McKinzie, U.S. Steel  
Pittsburgh, Pa.

W.G. Simmons, Chairman  
Monroeville, Pa.  
Mabel V. Vickers, Representative  
National Bureau of Standards  
Gaithersburg, Md.  
T.M. Wendel, Lockheed  
Sunnyvale, Calif.  
A.J. Whitmore, American Standard  
New York

In an atmosphere charged with friendly rancour, the leadership of the Association of Computing Machinery today heard themselves charged with:-

\*FALSE INTELLECTUAL SNOBBERY

\*EXTORTIONATE FINANCIAL POLICIES

\*PRODUCING UNREAD AND UNREADABLE PUBLICATIONS

Calls for remedial action in what was acknowledged by all present at a "Meet the Officers" session during the current Twentieth Annual Conference of the ACM in Washington centered on proposals to try to vote out the old guard during the next TWO elections. (It takes two elections before firm control can be established).

## Users Loyalty Survey

By James Peacock  
EDP Industry Report Staff

Computer users with IBM equipment are the most loyal to their present brand when it comes time to upgrade their systems. Those with RCA and Burroughs are second and third.

These facts come from a loyalty study just completed by EDP Industry Report, a newsletter for executives concerned with the electronic data processing industry.

In an analysis of equipment on order at over 1300 computer-using installations, 92% of the IBM customers had additional IBM equipment on order. Figures for the other major computer manufacturers were as follows: RCA, 84%; Burroughs, 71%; NCR, 65%; Honeywell, 58%; GE, 53%; Univac, 48%; Control Data, 44%.

Most of the computer manufacturers, however, made competitive gains. RCA topped the list with an increase of 84% (customers gained or lost divided by the total number of customers studied). Next were Control Data (66%), Honeywell (55%), Burroughs (19%), and GE (18%).

IBM had a 1% net competitive loss of customers, NCR dropped 12%, and Univac lost 35%.

Although the numbers are interesting, they must be interpreted correctly. "For IBM," it states, "the sample is large and the number reliably indicates loyalty."

"For the others, where the sample is much smaller, the number of customers gained or lost is close to or even greater than the number of customers in the sample who are ordering additional equipment from their present manufacturer. In these cases, the index is a guide, but the actual value of the numbers involved must be considered."

It gives two examples: "Univac had a net competitive loss of customers among those examined, so its reasonably low loyalty ratio is understandable. For Control Data, however, with a 66% net competitive gain in customers (second highest), the low loyalty ratio would imply that the company

CONTINUED ON PAGE 3

The charges came both from the floor and from the platform. The current ACM president - Dr. A. G. Oettinger of Harvard spoke up most vigorously about the need of the profession to recognize credentials other than the purely academic. He was supported in his views by Dr. H. Grosche, of the National Bureau of Standards.

However, while Dr. Oettinger deplored the academic bias of the society he placed the blame for it on the 'workers' who consistently voted academic after academic into ACM office. He invited them to vote non-academics into office if they really wanted to get their case adequately represented.

The possibility of a lively election campaign was being talked about after the meeting, and some preparations were made to put a revolutionary slate together.

Practically everyone agreed that contents of the papers at the conference left much to be desired. Dr. Al Perlis of Carnegie Tech used a telling analogy to take the blame off the conference arrangers. He likened

CONTINUED ON PAGE 3

## GALLAGHER NAMED IN MAFIA ARTICLE

WASHINGTON, Sept. 1 - Informed opinion in the Capitol today felt that Congressman Cornelius Gallagher's position in the House would not be affected by this week's article in Life. The article, dealing with the power of the Mafia in the United States, said that the congressman frequently got together with Bayonne Joe Zicarelli, who was identified as being a senior Mafia leader.

Industry circles had wondered whether the congressman's well-known opposition to the present plans for a national data-bank would effectively be nullified as a result of the article. The feeling was that, if a Mafia connection was proved, the sincerity of his position would be doubted in view of the obvious self-interest of the Mafia in obstructing the creation of a national data-bank.

### NO COMMENT AVAILABLE

The congressman was unavailable for comment when COMPUTERWORLD's Washington correspondent contacted his office late last week.



## Pigskin Printout

Fans of the long-thwarted Washington Redskins can take hope this season - if they have faith in computers. The team has commissioned C-E-I-R to produce weekly reports on game opponents, showing the correlation between field situations and plays called on offense and defense by their opponents.

The reports are geared primarily to give information on probability, with the computer calculating play inputs from previous games.

Hmmm.

## A Mystery Solved- And Action Wanted

One of the more puzzling minor mysteries of the computer world was solved during the current Washington meeting of the Association for Computing Machinery. Apparently the last word (Machinery) was selected in the middle of the night using the tenth quoted meaning of the word in a very large dictionary. So now we know HOW the ACM got handicapped with this piece of ridiculousness.

Now the mystery remains only as to how long it will cling to the patently poor name.

## Cobol Evaluations- By Users And For Users

The re-establishment of the CODASYL COBOL Evaluation Committee is one of the most welcome signs of maturity presently being displayed within the computer industry. Its mission is to collect, and to disseminate, performance information to actual and prospective COBOL users.

A down-to-earth mission which can help ordinary data-processors - and one which can set a standard for other commercial languages.

## The Human Computer

Our cover photograph this week shows how a \$150 stereoscope has brought three-dimensional displays into the computer room. A remarkable piece of simple, effective planning of which Brown University can well be proud.

Even more remarkable is the fact that the human brain quickly learns to interpret the two images on the display tube WITHOUT the use of the stereoscope! People around the installation found it quite easy just to 'kink' their eyes at the images on the display - and see it in three full dimensions!

Human brains are wonderful, aren't they?

## A Real Time Report

We are covering a real-time situation starting this week. One of our neighbors in Cambridge is trying to decide if he really wants a time-sharing console in his office - and who he should get it from.

So . . . COMPUTERWORLD will follow and report on his decisions - and their outcome.

We just think it may make interesting reading for you.

## Letters To The Editor

To the Editor:

We read with interest your article of July 26 on ADPAC. Your "Verdict" may be a reasonable one based on the information available to you.

We currently have approximately 200 Programmers writing in ADPAC in our Data Centers. The following comments seem appropriate at this time:

You state that ADPAC will do what it claims to do in "certain suitable circumstances". Your frame of reference infers a limitation that we do not feel is fair to ADPAC. We know from our experience that "suitable circumstances" covers a wide range of commercial data processing problems. In our nine Data Centers around the country, we write hundreds of programs every month, which consume from a half day to two weeks of programming time. Over 80% of this programming is done in ADPAC. We use it because it is the best language available. It allows us to get a job up and running faster and more economically than any other language and we've tried them all.

In six months of use, its effect on our cooperation has been two-fold. First we are doing more work without increasing our programming staff. Second, programming has virtually disappeared as a scheduling problem.

We have written numerous programs in ADPAC in less than ten hours that required in excess of 20 hours to write in other languages. We recently polled our programming staff and the consensus of opinion is that ADPAC has reduced our programming time by 40% and our compiling time by 65%.

Our experience is that the range of "suitable circumstances" which can utilize ADPAC is very broad. In view of this, earlier this year, our organization entered into an agreement with Applied Data Systems, Incorporated to sell and install ADPAC thru our Data Centers on a National basis. It is our opinion that ten thousand computer installations could be using ADPAC to the same advantage we presently enjoy in Data Centers.

Dean Gardner  
Vice President

Statistical Tabulating Corporation

To the Editor:

I would like to congratulate you on your "Measure For Measure" editorial in the July 26th issue of CW. The point concerning vague or unsubstantiated claims in the computer industry is correct. It is high time we started asking these embarrassing questions.

Continue to do the good work.

George J. Vasilakos  
Director of Marketing  
Information Development Company  
Santa Ana, California

To the Editor:

I read with great interest your article on "Black Computer Tapes" that are manufactured by Dupont. Could you supply me with someone's name at Dupont that can be contacted for further information on this subject?

S.J. Cafiero  
Systems Research & Development  
The Continental Insurance Company  
New York

Inquiries should be directed to  
E. I. du Pont de Nemours & Co. (Inc.)  
Photo Products Department CROLYN  
Magnetic Tape, Center Road Bldg.,  
Wilmington, Delaware. 19898. Ed:

## A Real Live Story

One enters an ultra-modern lobby. A girl clad in a white smock and wearing several intricate rings on each finger shows you to a room filled with books of all manner, and decorated with exotic Siamese prints. A new hippie club? Hardly; it is the office of COMPUTERWORLD's next door neighbor, James P. Collins and Associates. The firm is a consulting engineering office dealing in the intricacies of soil and land factors in construction. Mr. James P. Collins, its president, is a dynamic executive who deals firsthand with his clients, even if they happen to be in Burma.

He is currently planning a time sharing operation.

"Time and money have been our major concern," said Mr. Collins. "We've had to keep a sharp eye on the budget." With problems like foundation design for large buildings, tunnels, and highway embankments, Collins and Associates could not afford to write their own programs. But, as Collins said: "The number of technical problems require so much time that they can't be solved effectively other than by computer."

As a prospective computer user, Mr. Collins had to ascertain "where we're going and how we're going to get there". To help him, he retained the services of Computer Dynamics of Boston and Professor John Christian of M.I.T. Surveys were made on the feasibility of Batch Programming and Time Sharing, and two companies involved in the latter - an out-of-state operation and a local Boston concern - convinced Collins et al. that time sharing was the answer.

Both services require a teletype machine, which was ordered forthwith. However, as of press time, a decision as to which service would be employed had not been made.

An estimated 20K is needed at this time. The distant company offers 22K, with 32K available after 6 p.m. on their PDP 6. The local service can deliver 18K on its GE 235. Of course, line charges to the Boston-based computer would be considerably less than those of the out-of-state computer for Collins' Cambridge operation. However, a lease line at a very attractive \$7.50/ hour rate, with only local line charges, is available. The lease line, something promised by many companies but, so far as Collins was able to

determine, only one service has in operation, is feasible to time sharing companies when there is a concentration of users in one area (such as in the case of Boston-Cambridge).

Two slope-stability programs are going to be used at either the BISHOP-MAC (after Professor Bishop of Imperial College of Technology, Univ. London), and the MGSTRN-MAC (after Professor Morganstern). Both were tested at M.I.T.'s project MAC, a very large 2 memory bank system. Because of MAC's size, the FORTRAN-II language used must be converted to MANTRAN, and then compiled for use by the time sharing system.

The computer needed must handle large programs, so Collins is looking very closely at the software connected with the two companies now under consideration. He feels that time sharing is coming into its own, and looks forward to new programs which will enable the use of larger computers.

For the present, time sharing will produce better quality work in less time. Mr. Collins said that his firm will actually make less money per job using the computer, as man-hours were previously a basis for fees. However, work capacity will increase appreciably, and computer costs when slow periods develop are considerably less than the salary of an equivalent engineer.

"We have only \$600 to \$800 invested in this project up to now, but we have no illusions about the sweat and strain required to get it functioning, when we are dealing with problems that will determine 6 to 8 million dollars in construction costs for some of our clients."



J. P. Collins (far right) and associates discuss programming problem.

## COMPUTERWORLD

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# Is Fortran Fight Coming?

## IBM Language Policy Under Scrutiny

Last week's exclusive COMPUTERWORLD publication of IBM language story is causing users to take preparatory action to prevent any freeze of Fortran development. Univac, Control Data and SDS users in particular were examining the situation as they all believe their presently available forttrans are major improvements over the USASI FORTRAN standard (and also other IBMs current Fortran implementations.). Government users were also unofficially supporting these actions, as they can more easily demand "Standard" software then ask for many specific improvements.

Attention was concentrated on the qualification "except where accepted industry standards dictate" and people were looking to find some way through the IBM dominance to find a position where such a standard could be enforced without IBM assistance.

Such an area was thought to

be found in the super-scale computer area, presently dominated by Control Data. These computers normally use Fortran programs rather than commercial-type languages, and many of the installations have an inventory valued at millions of dollars, which they are hoping to be able to build on in the future.



**THREE CENTURIES OF PROGRESS** — More than 300 years ago, Blaise Pascal invented the first true calculator to add figures automatically. A model of that machine (in the girl's hands) was on display in the International Business Machines Corporation exhibit at the 20th Anniversary Conference of the Association for Computing Machinery (A.C.M.) in Washington, D. C. The Pascal Model and a replica of a Leibniz calculating machine from 1694 are shown here at the operating console of an IBM System/360 computer.

## CDC 3500

CONTINUED FROM PAGE 1  
ing greater throughput. Future developments of MASTER will incorporate multi-access capabilities and conversational time-sharing.

The 3500 hardware includes an interleaved memory, with an average access time of 600 nanoseconds, and a complete cycle time of 900 nanoseconds. "Interbrid" circuitry is employed throughout the system, Control Data claims that it offers the advantages of software is based on the presently-operational MASTER operating system. MASTER is a mass storage oriented, multi-programming operating system which interleaves the execution of instructions from different programs, giving

both monolithic integrated and hybrid circuitry.

Control Data's complete line of peripheral equipment is available for use with the 3500. It includes magnetic tape transports, disk storage drives, card readers and punches, high-speed line printers, Digigraphics systems, visual CRT entry/display stations and remote communication terminals — such as the new Control Data 200 User Terminals.

A complete Control Data 3500 Computer System configuration will have a minimum purchase price of about \$1 million. It is available on a leased basis for \$25,000 per month.

## Snobbery

CONTINUED FROM PAGE 1

the system to an accounting one, which was wrecked by the use of 'counterfeit dollar bills' which the auditors could hardly be blamed for. Dr. Bernard Galler, seemed doubtful whether the sessions had been a failure, but most speakers relapsed into mild obscenities when speaking of them! One exception mentioned was the experimental session 'Papers Revisited' chaired by John Gosden which was described as having been one of the best in the conference.

Remedies for the problem of improving the quality of the paper varied from suggestions of forcing AFIPS to stop having two shows a year (the Spring and Fall Joint Conventions), to the revolutionary suggestion that we stop pretending that we attend shows for other than social purposes!

## DOLLARS VS. SCHOLARS

Another strong fight developed between the academic and non-academic factions on the value of the ACM Journal and Communications. Many members got up and said that they did not — and could not — read them. Academic types responded that this showed that they were illiterate — and that anyone who did not contribute a paper a year to the Journal (which is considerably more academic than The Communications) should be drummed out of ACM!

## INCREASING FEES

Financial matters kept popping up, and Dr. Oettinger reported that progress was being made on changing the accounting system of ACM to a cost center basis. He said that by next year the cost of each specific activity would be able to be reported on separately.

This was welcomed by those present, but deplored the forth coming increase in annual dues (up from \$18 to \$25), the charges for tutorials (A time-sharing one recently cost \$75 per enrollment) and in particular the \$50 non-member registration fee for the Washington conference. Carol Summers described this as being 'extortion' — and also as having wasted a valuable opportunity to show the good side of ACM to many government workers.

## IBM Users Loyal

CONTINUED FROM PAGE 1

is perhaps going through a dramatic change in its customer base."

Except in the case of Univac and Honeywell, both of which lost customers to five or more other manufacturers, almost all customers lost were to IBM. Likewise, it continues, "in the case of every competitor to the giant, the customers gained were almost all from IBM. IBM picked up most of its gains from Univac (27 of 72) and lost most to Honeywell (23 of 87).

The study did not include orders from installations with a wide variety of equipment or from companies that are getting their first computer. It notes:

"This market — which is primarily for small machines such as the GE 115, the Honeywell 120, the IBM 360/20, and the Univac 9200 — is very competitive at present."

## B-8500 Begins To Run PL/I Subsets Operating

COMPUTERWORLD has learned that the Burroughs 8500 systems at Paoli is going on the air. The hardware is now up for some hours at a time and is being used for preliminary testing, while the software is being run in simulation on B 5500. The similar hardware-software developmental program for much sim-

ilar systems of the B500 series show a dramatic success earlier in the area.

The software presently being used includes two subsets of PL-I indicating more development in this language than most non-IBM manufacturers are presently known to have made.

## Phase II Rebid Asks Life-Cycle

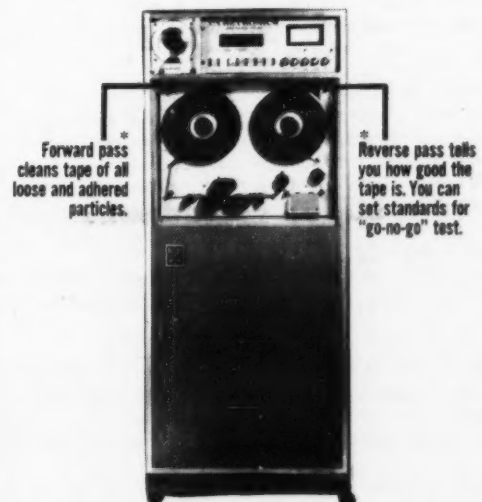
The revised Air Force Phase II proposal asks all bidders to provide year-by-year life cycle costs for their equipment. In the earlier bidding only IBM provided such data. It was through the Air Force's basic agreement that life-cycle costing was valid. The initial price differential of \$65

million was not considered as a closing out consideration of the IBM proposal.

The proposal also reveals the Air Force's estimates of the frequency of breakdowns requiring maintenance calls (3 per 100 hours operational use) and the ratio of manning hours needed to generate operational hours (4 to 3).

See us at booth No. 214, FIJC, Anaheim, Calif.

## THE REAL PRICE OF MAGNETIC TAPE IS ITS FAILURE COSTS ON THE COMPUTER — NOT ITS PURCHASE PRICE.



\* Forward pass cleans tape of all loose and adhered particles.

\* Reverse pass tells you how good the tape is. You can set standards for "go-no-go" test.

## INTRODUCING THE NEW CT-100

gets your tape as clean as possible — lets you know just how good it is. Here's what this revolutionary new system will do.

1. The Cybe-Tester can test simultaneously for signal dropouts — adjustable from 20 - 80% threshold.
2. Write skips — preset threshold at 32% — (computer operating level).
3. Skew errors — adjustable for proper density.
4. 7 channels, 556 bpi or 800 bpi.
5. 9 channels, 800 bpi or 3200 fci.
6. Full-surface (5/4 head) 800 bpi or 3200 fci.

## The Cybe-Tester will indicate:

1. How many signal dropouts.
2. How many write skips.
3. How many skew errors.
4. Location of each error.
5. Tape length in feet.

## You determine the tape specifications.

1. How many errors are acceptable (error counter).
2. What channel format (7, 9, 5/4).
3. What density (556, 800, 3200).
4. What repairs to make (from chart and counter).
5. You take the proper action (tape OK — tape needs repair — replace tape).

\*Basic machine.

Want more information? Write or call.



**CYBETRONICS INC.**  
122 Calvary St., Waltham, Mass. (617) 899-0812



## BULLETIN BOARD

British commercial programmers find PL/I easier to learn, to write and to debug than their technical colleagues. In a recent symposium just outside London, reported in the August Computer Journal, at least half the technical programmers voted that PL/I was not easy to learn, to write, or to debug. By contrast only 10% of the commercial programmers are reported to have found it hard to learn, none of them found it hard to write, and only 27% found it hard to debug.

WASHINGTON, D.C., August 31 - The Armed Forces Management Association (AFMA) presented its service award for outstanding accomplishment in the field of professional management here today.

The award, presented to RCA, is in recognition of the company's outstanding contribution to the aims and objectives of AFMA. They have provided us with a very informative EDP Management Seminar Manual and material which will be used by AFMA to communicate management information to the membership in an effort to improve management methodology.

August 29 - IFIP CONGRESS 68 will be held at the University of Edinburgh, Scotland, August 5-10, 1968. Information scientists have been invited from the U.S. to make twelve presentations.

IFIP represents the information processing interests of the professional-technical scientists of the 28 nations currently most active in information sciences and computing machines. People from the U.S. who will make invited presentations include: J.J. Baruch (General Electric), E. Bloch and R.A. Henle (IBM Systems Development Division), A. Borsei and A. Bos (Sperry Rand Univac), F.J. Corbato and J.H. Saltzer (M.I.T.), G.E. Forsyth (Stanford University), E. Horwood (University of Washington), W.J. Karplus (University of California), J.A. Robinson (Rice University), G. Salton (Cornell University), L. Schoenfeld (Pennsylvania State University), and P. Suppes (Stanford University).

The NBS Center for Computer Sciences and Technology (U.S. Department of Commerce) has just completed the compilation of an automated index of Government-sponsored R&D projects in the computer sciences. The index, which covers almost 2500 projects, was prepared with the assistance of the Defense Documentation Center, and is available for such representative machine searches as the listing of all projects for which a particular investigator has responsibility, or the determination of the amount of money spent by a certain agency on all projects in the computer sciences.

It is available for study at the Computer Center's Technical Information Exchange at Gaithersburg (Md.) laboratories of the National Bureau of Standards.

August 26 - A speedy new IBM 9020 computer is scheduled to go into full-time operational service at the Federal Aviation Administration's Cleveland Air Route Traffic Control Center (ARTCC) this month, permitting more expeditious handling of the increasing number of aircraft in the busy New York-Chicago air corridor.

The Cleveland installation's IBM 9020 is the first to become operational in an FAA center. The agency eventually plans to use this equipment as the central computer complex in all of its ARTCC's. It is a key component in the semi-automated National Airspace System now being developed.

The Joint Conference of UNIVAC Users Association and UNIVAC Scientific Exchange will be held in Minneapolis, September 19-22.

Featured speakers at the UUA Wednesday session will be Dr. Herbert R.J. Grosch, Director of the Center for Computer Sciences and Technology of the National Bureau of Standards, and Paul B. Goodstat, Director of Standards of the Business Equipment Manufacturers Association.

Of special interest will be the meeting on UNIVAC 9200/9300, which makes its appearance at the Conference for the second time. The future influence of the new series is expected to be extensive.

A partial list of topics to be discussed at the Conference includes: "Debugging Techniques", "The COBOL Flow-Charter", and a report to users on the current status of hardware and software for the 490.



IBM PERFORMANCE RECORDER can measure 256 operating conditions simultaneously. The experimental machine is fast enough to perform several operations BETWEEN the execution of two instructions of a complex computer system (or, as fast as 20 billionths-of-a-second). In monitoring a computer's performance, the performance recorder collects data on some computer conditions which never before have been measurable as well as measuring others more accurately.

## Computers To Be 3rd Largest U.S. Industry



A FIRST - The CDC Information Retrieval System (shown above) was used in real time convention work at the ACM show. It was the first computer message handling system ever to be used at a trade show.

The Computer Industry was placed as being destined for the third position in the United States economy - with only the automotive and oil industries being bigger. This forecast was made by Isaac Auerbach, while chairing a session featuring the great pioneers of computing - way back twenty years ago. His optimism was equaled by Ed Berkeley's prediction that the membership of the Society would increase eightfold and would shortly exceed 200,000. Dr. Oettinger, ACM President, while not doubting that the industry is continuing its dynamic advance into the near and long term future, pointed to the difficulties in obtaining the necessary funds to support the needed expansions in the present economic circumstances. Noting that much of the funding of the necessary research comes from the Government, and the difficulty of avoiding actual budget cuts in the present situation (because of the demands of the Viet-Nam war) he feared that many projects which should be started will simply not get the funds. This can really hurt the industry during one of its most critical periods he told Computerworld at the conference.

(In an effort to improve the strength of the industries representation in Government policy making studies, moves are being made to consider whether the ACM headquarters should be moved into Washington from New York. It is known that this may involve some staffing problems, and the whole question is still under study).

These were some of the highlights of the Twentieth Anniversary Conference of the Association for Computing Machinery which was held on August 29-31 at the Sheraton Park Hotel in Washington. Throughout the three days the hotel bustled with activities in the sessions, and on the exhibit floor. The exhibition was bigger than ever before, with IBM and UNIVAC probably tying for the most visited exhibits.

IBM, UNIVAC EXHIBITS  
Both featured consoles where passers by could present short programs to a computer for compilation, and execution where appropriate.

The IBM system was the RAX (Remote system using a conversational statistical system operated from a Model 40, which was on the stand itself.

The UNIVAC offering was the Univac 1108 Time-Sharing Executive system which allowed console users to use the re-entrant COBOL, FORTRAN or Assembler programs. Interestingly enough some ingenious souls had apparently come to the exhibition so that they could run their own jobs - and get rather more time than they could obtain at their installation sites! One potential user was taking the opportunity to test out the FORTRAN V compiler, and to evaluate the extensions to the FORTRAN IV language which had been incorporated in the compiler. Talking to COMPUTERWORLD's report-

er she listed about eight significant extensions which she felt would substantially effect programmer productivity. These include items like the ability to subscript subscripts; to enter routines at more than one place; to jump back into DO loops. Her opinion of the extensions, was that they allowed the programmer to get on with the job he was paid for - and spend less of his time fighting his compiler.

The Computerworld stand was also very popular. Particular attention was paid to Computerworlds publishing of the IBM Language Policy statements. A number of officers of industry-wide committees found this very interesting, as they had been unable to get more than confusing verbal reports of the position before Computerworld came out.

## Trong Vietnamese Vowi Computer Dictionary

CODE VAWAAS  
SENTENCE - TRONG TRUONGHUNG HONH DUONG DUONG VOWI CASE DUONG VIJ  
DUONG HUNG DUONG HUNG TRUONG PHAI TRUONG GIANG CHIEEN.

FROM (1) INSIDE CLEAR  
TRUONG HONH - CASE, EVENT  
DUONG DUONG - MILITARY ENCOUNTER CONTACT  
VOWI - (1)  
DUONG - (1) TO PAY (1) PALACE  
DUONG - (1) TO OPPOSE  
DUONG - (1) TO OPPOSE  
DUONG - (1) TO OPPOSE  
TRUONG - (1) TO OPPOSE  
PHAI - (1) TO OPPOSE  
TRUONG - (1) TO OPPOSE  
GIANG CHIEEN - (1) TO OPPOSE

The Computing Technology approach to Vietnamese-to-English Translation is illustrated by the printout shown above. The original sentence is examined, and translation possibilities are listed against words or groups of words. At this point the computer hands over to the human translator, who selects the appropriate alternatives simply by ringing them one after the other.

The first demonstration of a computerized automatic dictionary (developed by Computing Technology Inc.) that is capable of looking up Vietnamese words and providing their English translations instantaneously took place August 29 - 31 at the 1967 20th Anniversary Conference of the Association for Computing Machinery (ACM) in Washington, D.C. The demonstration made use of a time-shared network which terminates with an RCA Spectra 70/45 computer system located in Cherry Hill, New Jersey.

The need for a high-speed language translation aid has been demonstrated many times in Vietnam. Documents captured from Viet Cong casualties or prisoners of war have lain dormant for months, the backlog filling many warehouses, before reaching the desks of human translators. By then, the information contained in these documents has often lost its tactical value.

The demonstration, conducted by Computing Technology Incorporated of Paramus, New Jersey, permitted visitors to the Washington ACM show to insert Vietnamese words and sentences into the computer at the Washington end of the computer line and immediately obtain English equivalents. English words and sentences selected from a limited sub-set were translated into the Vietnamese by an interpreter at the booth and this inter-

pretation was then fed to the computer.

The computer performs a word-for-word, and in some cases phrase-for-phrase, look-up in a stored Vietnamese-English dictionary and outputs the English equivalent for each word or phrase of the input sentences. The dictionary-matching procedure makes use of a longest match technique so that in some cases whole phrases may be translated. Because Vietnamese is reasonably responsive as a language to word-for-word translation, the new technique should provide useful raw intelligence to a military unit on the contents of captured documents.

Computing Technology Inc. has been working in the field of computerized foreign language processing for many years now and will be offering a variety of machine aids to organizations engaged in the teaching, translation and publication of foreign language and bilingual materials. Computing Technology's capability extends to all the major European and Asian languages and to many African and Southeast Asian languages.

Three types of services were featured by Computing Technology Inc. at the Washington conference. These included foreign-language teaching aids: monolingual and bilingual concordances, dictionary generation, and mechanical dictionaries (look-up and maintenance systems).



## U.S. Gov't Purchasing Methods Doubted Washington, Aug. 25

A close look at the techniques for budgeting in national security affairs has begun with a secret meeting of the National Security Subcommittee of the Senate Government Operations Committee.

Budget Bureau Director Charles Schultze was the first witness before the group headed by Sen. Henry Jackson (D., Wash.), which will probably wind up in the weeks to come with a blast at the "new look" that came to government planning in 1961 when President Kennedy named Robert McNamara as Secretary of Defense. It was Mr. McNamara and a close group of associates at the Ford Motor Company who were the original "whiz kids".

Today the system is designated PPBS: Planning - Programming - Budgeting System. Mr. McNamara's whiz kids at the Pentagon became embroiled in a series of disputes with generals and admirals, including still lively issues like the F-111 and nuclear aircraft carriers.

While the Kennedy-Johnson Administrations have moved further to implement the most modern techniques of decision-making in the federal budgeting process, to some, their efforts haven't been speedy enough. In August of 1965, President Johnson recommended PPBS be installed throughout the Executive Branch of the government. Congress, on the other hand, has been slower to embrace the system.

An extensive review of the use of PPBS at the Pentagon will be conducted by the Jackson Subcommittee in the light of the suggestion that other executive agencies could adopt it. The Jackson Subcommittee's staff work already has indicated that "the State Department, like a number of other agencies, may find PPBS of little use."

## New Way To Enter EDP Education Field

The respected and well-known 80-year-old Concord Commercial College has been acquired by Time Share Corporation. The announcement was made by Charles A. Morrissey, Executive Director of TSC's Education Division.

Established in 1887, Concord College has served the Granite State by offering one and two year programs in Business Administration. TSC will move Concord College to modern facilities at the Ammon Terminal Building in Manchester, New Hampshire. The College, although housed in a separate wing, will make use of the IBM/360 Computer located in the same building with TSC's Programming and Systems Institute. PSI and Concord College will offer joint programs of study. Mr. Thomas A. McGahan, former president of Concord Commercial College, will direct the new Business Administration Division.

In discussing the acquisition, Mr. Morrissey stated, "Today's changing business methods have been so heavily influenced by the computer that business education must find newer and better methods to keep pace. Modern business curricula must balance traditional business disciplines such as accounting and economics with courses in systems, analysis and programming."

## 1966 GAO Report

### Mismanagement Cases Reported

The General Accounting Office has offered a simplified guide to staying out of trouble. The guide takes the form of an annual report to Congress summarizing its recommendations (some previously published) for the improvement of government operations. The report just made public covers fiscal 1966.

The GAO cites three cases of mismanagement concerning automatic data processing equipment; two with the Federal Aviation Agency and one with the National Aeronautics and Space Administration.

The failure of the FAA to provide for purchase options in its equipment rental contracts is the subject of a case involving the New York Air Route Traffic Control Center. The GAO says the mistake cost the government \$147,000.

In another instance the FAA did not use a rented computer system for "substantial periods of time". According to the GAO, benefits not received by the government from the system represented a cost of \$259,000. Another \$14,000 went down the drain because of maintenance and rental charges on equipment in storage, or not available for use.

NASA, also, was under the GAO's eagle eye in 1966 for failing to use fully leased computers at Ames (Ia.) Research Center. NASA didn't make the "thorough analytical studies" it should have to properly use the equipment. This excess computer capacity led the GAO to recommend centralized direction from Washington of individual research center ADP needs.

## Remote Job Entry On 360

### RJE Announced For 360 512K Needed- No MOD 20's

IBM has announced the forthcoming availability of their Remote Job Entry programs for the System/360. This will allow a distant 360 or 2780 Data Transmission Terminal to enter OS/360 jobs for runs at a central computing facility, and to receive their output at the remote site. The central facility can be a 360/50, 65, or 75 running in MVT (Multiprogramming with a Variable number of Tasks) mode, with at least 512K core. The remote can be either a main line 360 (Model 30 up) or a Data Transmission Terminal.

Industry comment on the announcement stressed its weaknesses: the very large core requirement for the central processor, which makes the software unusable on most of the 360 systems in the field; and the omission of the Model 20 as a possible remote station.

Remote Job Entry provides:

- A job entry control language which complements OS/360 job control language to provide additional flexibility and control.

- An OS/360 job may be submitted at a remote work station. This job can be identical to a job submitted at the central System 360 input device.

- The job output may be directed to return to the work station immediately or held until requested by command.

- Output may be directed to the user submitting the job or to an alternate recipient.

## 22nd ANNUAL I.S.A. SHOW

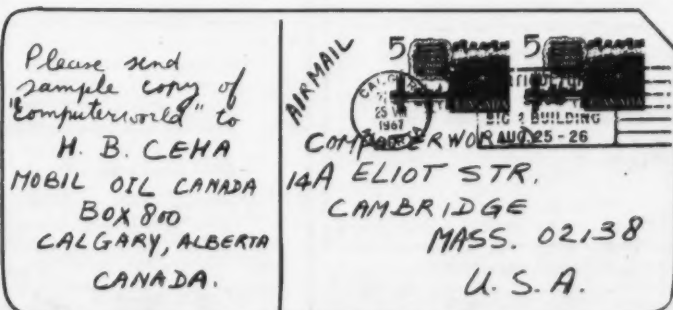
A demonstration of memory systems in buffering, code conversion and stored program operation will be featured at the Ferroxcube Corp. booth at the 22nd Annual ISA Instrument/Automation Conference and Exhibit, to be held at the International Amphitheatre in Chicago from September 11 through 14.



N. J. Bell Telephone's Trunk Facilities Administration System uses Bunker-Ramo visual display units for direct updating and record retrieval of computer-stored information.

## How To Use A Punched Card

We have seen many ingenious uses of punched cards — but this one which came into the COMPUTERWORLD offices recently was a novelty —



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## Our Cover Story

### \$150 Aid Allows Computer Created 3-D Pictures

PROVIDENCE, R.I. Aug. 22 — A computer here is creating pictures — as simple as a cube and as complex as a refinery pipeline — that can be seen in three dimensions.

The computer, an IBM System/360 at Brown University, can produce a pair of images, differing slightly in perspective, side by side on a television-like screen. By looking at the screen through a standard \$150 stereoscope, a person sees the two images merged into one with the added dimension of depth.

The images, geometric models stored in the computer's memory, can actually be manipulated on the screen — enlarged, reduced, moved up or down or rotated.

In addition, a person can input data to the program.

Dr. Walter Frelberger, professor of applied mathematics and director of Brown's computing center, says that the use of a computer to create three-dimensional pictures has great potential for industry.

"The petroleum industry, for instance, might be able to end the laborious process of building an actual model of each refinery it plans to construct," he says.

"Right now scale models are constructed to check that the thousands of pipe-lines required for a modern refinery don't run into one another. It may be possible to do the same job — at a great saving in time and money — by giving the data in architectural plans to a computer and then inspecting the three-dimensional results on the screen."

The experimental 3D project at Brown has been undertaken by Charles M. Strauss, a graduate student, and Dr. Andries van Dam, assistant professor of applied mathematics, who is supervising this doctorate work in the Division of Applied Mathematics.

The program, which operates in a 128K partition under OS/360, currently stores the representations of objects on 3 2311 disks. A 2314 due to be installed shortly will allow considerably more complex objects to be stored than is currently the case.

Because the results are to be three-dimensional, the program must — in effect — construct two pictures of each object, one for each eye. The special viewer, called a stereoscope, uses mirrors and prisms to merge into one the two slightly different images that are produced.

Manipulating the pictures on the screen — making them bigger or smaller, rotating them or moving them up or down — is accomplished by pressing various keys on the display unit. The "window" through which the objects displayed on the screen appear to be viewed can be moved by the viewer in order to "zoom" in for a closeup of a part of an object.

## RCA Faces Up To 360 Incompatibility

An RCA spokesman said this week that RCA is facing up to the problems caused by the constant changes in the IBM 360 software by defining DOS, one of the three major IBM operating systems, as the one they will stay directly compatible with — and by preparing and distributing to users guides as to how to maintain compatibility between the two systems.

This unusual operation is necessitated by the prime RCA marketing strategy of infiltrating the profitable, large IBM strongholds as a second supplier. The Spectra 70 systems, which are hardware compatible with the 360's, have to cope with the problems of software compatibility as well if this is to be achieved. As the various problems of IBM's software have become apparent, RCA has had to take a positive attitude if their marketing aim was to be achieved.

The preparation and distribution of the Compatibility Guides has been a major asset in the success of the program.

## This Space For Rent



## Personal Page

### IS EVERETT D. PARKER THE PROBLEM?

Our Personal Page Editor's article "ARE WOMEN A PROBLEM?" (CW June 21) is still causing some commotion. People were talking about it at the recent ACM Meeting -- so here are two female and one male response. These letters put the other side of the picture. Perhaps it's not women who are the problem -- but Everett D. Parker! Judge for yourself.

To the Editor:

As a female programmer who has been in data processing for eleven years, I am compelled to follow your suggestion to comment on your article in Computerworld, "Are Women A Problem?"

Perhaps women are superior problem finders, but this is an advantage. In data processing problems are created or discovered daily -- systems are automated, programs created, procedures developed and operations performed -- and men do not look for problems which could and should be solved before they occur. If a male analyst, programmer, operator, or even supervisor or manager becomes aware of a possible problem, he frequently slides over it with the thought that when the situation must be handled, he will be on another project or too busy to correct it and someone else will have to deal with it. And at the time something must be investigated and corrected due to lack of thought on the part of the male creator, the steps taken are usually to "put out the brush fire" only, and rarely to prevent the same or similar situation from happening in the future, unless prodded by the supervisor. This points out how poorly men solve problems. More often than not, the male non-problem-finder will not be aware of any diffi-

culty simply because men, as a rule, will not become involved in detail, a very necessary fact of data processing life. If women find problems, they have probably been created and ignored by men, and the few women who would not be classified as problem finders are females contented to accept any situation without questioning feasibility, lack of thought or understanding, etc. They just don't want yes-men (or women) but let a woman leave the pack of doves and she is stepped on as soon as she tries to become an eagle.

You say women frequently demand all the advantages of their professional position (and in the same article imply a woman sits idly by as her male co-workers go on to management positions and accepts less money than she deserves because she is too timid to ask for a raise!) and accepts only some of the disadvantages. I have yet to see a demanding but undeserving female go beyond a low level job in Data Processing Departments or even remain in the data processing field. I have worked with many men who expect everything to be handed to them on a silver platter without feeling any responsibility or obligation toward their work. Men do only what they have to do and get away with it. If found out and urged to do more, they rebel and

feel put upon. Women have a reputation of being emotional but men can be very childish.

While supervision hesitates hiring single women because they have an active social life, and married women because they have families, they willingly hire single men who also have active social lives and are always looking for greener pastures with higher salaries, and married men can have two jobs and social lives between nights out with the boys and obligations to their families. Can these men be any more reliable than a single or married woman?

The idea that managers must use a different method in handling women than they would with men is absurd. Those that do would not be considered good managers.

You say a woman creates serious problems in training programs because she generally learns more quickly and performs more efficiently than her male colleagues, thus the young male pride is harmed, creating a very sticky morale problem for the manager. If this is the case, and I am not agreeing that it is unless the male trainee is emotionally unfit for male or female competition, managers who use this as a reason for not training women are not looking at the whole picture. The training period is a short time and the

least expensive when compared to the length of time the person is performing and being paid for the job he or she was trained for. If a woman trainee is a faster learner and more efficient than the male trainee, doesn't it stand to reason she would also be a better trained employee?

As you say in your conclusion, the article contains some points of view and I assume they are yours. This letter contains my points of view and do not agree with those of most of my male co-workers, although some have agreed they have not worked with enough so called professional women in data processing to discuss the article with me. Perhaps this could be the case with all men who have formed a prejudicial opinion against women in data processing.

Betty J. Pierce  
Wyman Gordon Co.  
Data Processing Dept.  
Worcester, Mass.

To the Editor:

We at Auto-Trol Corporation read your article, "Are Women A Problem?" with mixed emotions. We agree with you that women are a problem. They have been since Adam met Eve. To understand a woman, you must have the patience of Job and the wisdom of Solomon.

Women are a problem is the rule -- I would like to tell you of an exception. The exception is Tamsin Barnes, our Marketing Director.

As Marketing and Sales Director, Tam Barnes is responsible for the total sales of her company. Over and above this, she travels all states east of the Mississippi River and in addition gives assistance to the other salesmen in their territories. She attends all Conventions and Shows as are necessary in the marketing of her companies products.

The position of Marketing Director does in no way interfere with Tam Barnes' home life. She has a lovely home, a swimming pool, five children and a husband by the name of Bill -- quite an accomplishment, to combine a full life of excitement in the data processing field with a complete and happy home life.

Other women, interested in data processing, should take a page from Tam Barnes' book. Here is one woman that contributes and receives happiness in that contribution.

My hat is off to her and to her I give kudos and accolades. She is the true exception to your rule.

G.H. Williams  
General Manager  
Auto-Trol Corporation  
More on page 7



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### More "Personal Page" Letters To the Editor:

I have just read your editorial "Are Women A Problem?" in a complimentary issue of Computerworld received by our company.

As a woman who has been engaged in programming and systems analysis for nearly seven years, I would like to offer the following comments and criticisms.

You state that "Women frequently demand all the advantages of their professional position and accept only some of the disadvantages." I feel that this is a grossly misleading statement. Perhaps some of them do, but I have not found this to be true on a large scale. If women work less overtime hours, shift work, or assignments on short notice than their male counterparts, it is more often due to the manager's reluctance to assign work with more responsibility to women than to woman's reluctance to accept the work and/or hours. You state that "Almost every manager feels more comfortable asking a family man to assist in extracurricular projects than he does a woman, single or married." This, unfortunately, seems to be true, but it is *not* the woman who is creating the problem, it is the manager.

You state that women create morale problems in a training program when male trainees must compete with women which they do not like to do anyway. This, also, seems to be true. But here again the problem is not created by the woman but rather by the male ego.

You state that "A woman needs other women to talk with. If she does not have this kind of feminine companionship, it is easy to begin to look at people, places and things from a male point of view. For a woman this can be tremendously defeating for her personal happiness". I do not believe that developing or acquiring a "male point of view" should defeat anyone's personal

happiness. If anything, it makes life more enjoyable by broadening the scope of a woman's knowledge. I believe that most women who are attracted to the computer field with a sincere desire to succeed are attracted to it because they already have a tendency "to think like men." Developing a "male point of view" is not synonymous with unfeminine. One can be feminine and still think logically.

You state that women are not readily promoted and are frequently paid less than their male counterparts. This, unfortunately, is true. It is also true that many women do not demand or ask for the salary that the position should pay. Perhaps this problem could be solved if managers paid on a "position" basis rather than placing an employee in a position of "demanding" a just salary.

The problems covered in your editorial do exist. I do not, however, feel that "Women are a Problem" but rather that "Women are faced with many problems." I do feel that women entering the field should be made aware of the problems they face. Perhaps some day the male-created problems will no longer exist.

Florence Michael  
Programmer/Analyst  
Auto-Tronix Universal Corporation

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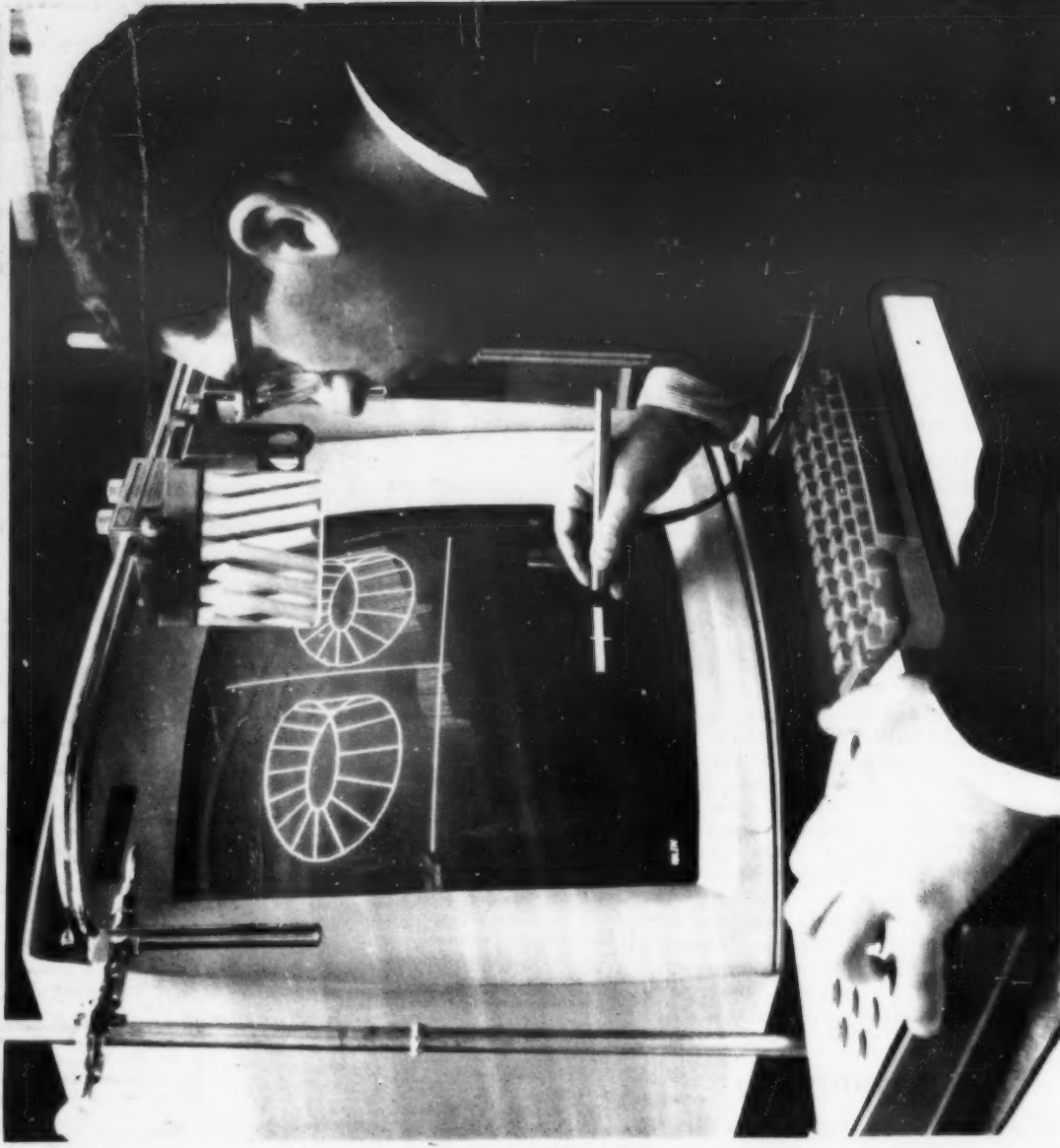
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